SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT, NOVAYA ZEMLYA, 18 October 1975

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Teledyne Geotech

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SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Novaya Zemlya, 18 October 1975

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

SDCS EVENT REPORT NO. 51

Novaya Zemlya, 18 October 1975

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

	"P" Arrival	Origin Time	Lat.		Long.		m_b	M_s
NORSAR	09:04:24.1	08:59:55	71	N	054	E	6.6	N/A
Hagfors	09:04:20.2	09:00:20	72	N	047	E	N/A	5.1

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

08:59:50.2	69.6N	055.3E	6.6	4.9

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at all SDCS stations, LASA and NORSAR. Horizontal SP channels at HN-ME, FN-WV, CPSO and WH2YK were rotated. Rotation of horizontal SP channels at RK-ON could not be accomplished because the SP transverse channel was inoperative. NORSAR data were obtained from their bulletin; the TAL transmission was not recoverable.

Long-period signals were recorded at all SDCS stations, ALPA, LASA and NORSAR. Horizontal LP channels at CPSO, FN-WV, HN-ME and RK-ON were rotated. At WH2YK horizontal LP channels were not rotated due to signal clipping on the LP radial channel. Validity of the ALPA and NORSAR long-period vertical beams is uncertain. LASA long-period array data are recoverable in 6 minutes 40 seconds segment lengths; two segments are included in this report. There were not enough data points to allow recovery of the 23-17 seconds period Rayleigh signal at LASA.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA. LASA SP scaling factors are millimicrons per inch.

STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES DEG MN SECS	ELEVATION METERS	INSTRUMENTATION SHORT-PERIOD	LONG-PERIOD
ALPA	Alaska	65 14 00.0 N 147 44 36.0 W	626	None	31300
CPSO	McMinnville, Tennessee	35 35 41.4 N 085 34 13.5 W	574	6480 V 7515 H	SL210 V SL220 H
FN-WV	Franklin, West Virginia	38 32 58.0 N 079 30 47.0 W	910	KS36000	KS36000
LASA	Billings, Montana	46 41 19.0 N 106 13 20.0 W	744	HS10	7505A V 8700C H
HN-ME	Houlton, Maine	46 09 43.0 N 067 59 09.0 W	213	18300	SL210 V SL220 H
NORSAR	Kjeller, Norway	60 49 25.4 N 010 49 56.5 E	379	HS10	7505A V 8700C H
RK-ON	Red Lake, Ontario	50 50 20.0 N 093 40 20.0 W	366	18300	SL210 V SL220 H
WH2YK	White Horse, Yukon	60 41 41.0 N 134 58 02.0 W	853	18300	SL210 V SL220 H

Note: The orientation of the radial instruments at FN-WV is assumed to be 316° ± 5° based on empirical data (event recordings). Rotation, where performed, is referenced to this azimuth and may be questionable.

HYPOCENTER DETERMINATION

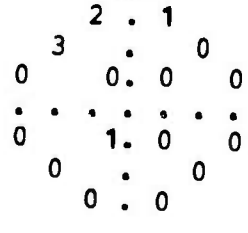
INPUT FOR EVENT 18 OCT 75
08:59:55.0 71.002N 54.000E 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
NAC	09 04 24.1	-0.0	-0.2	20.1	266.2
WH2YK	09 08 42.6	-0.1	-0.3	49.8	6.6
HN-ME	09 09 38.4	0.1	0.1	57.3	316.3
RK-CN	09 09 40.3	-0.5	-0.8	57.7	337.2
LAC	09 10 19.3	0.6	0.6	63.2	345.8
FN-WV	09 10 45.5	0.6	0.8	67.2	322.8
CFC	09 11 09.7	-0.7	-0.3	71.2	327.1

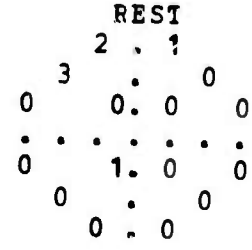
67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
08:59:42.7	69.993N	54.840E	-65. CALC	0.5	5	7
08:59:50.2	69.630N	55.254E	0. REST	0.6	4	7

CALC



REST



CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.15
MAJOR 262.6KM. MINOR 27.9KM. AZ= 144 AREA= 23006 SQ.KM. REST

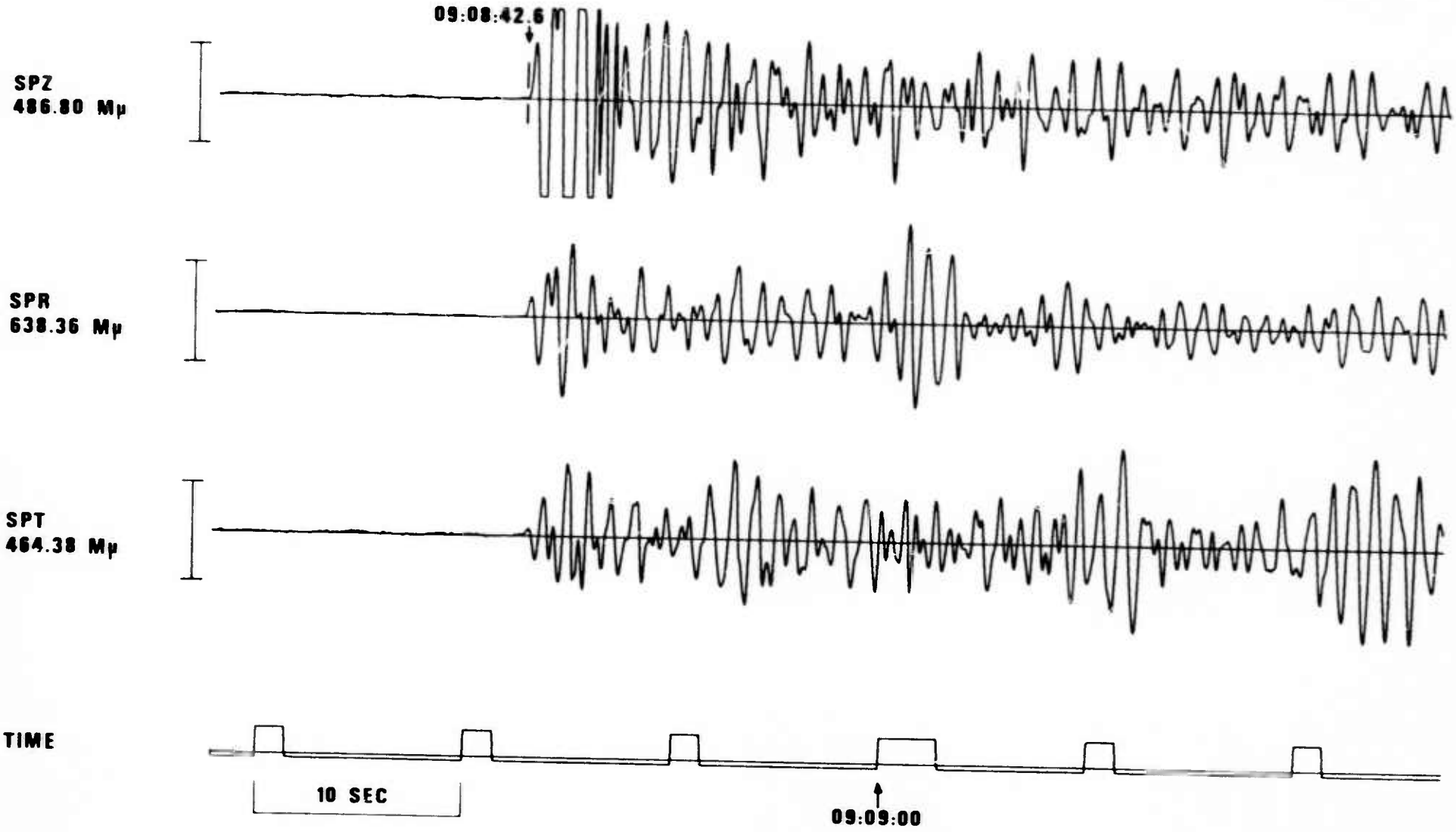
DATA SUMMARY

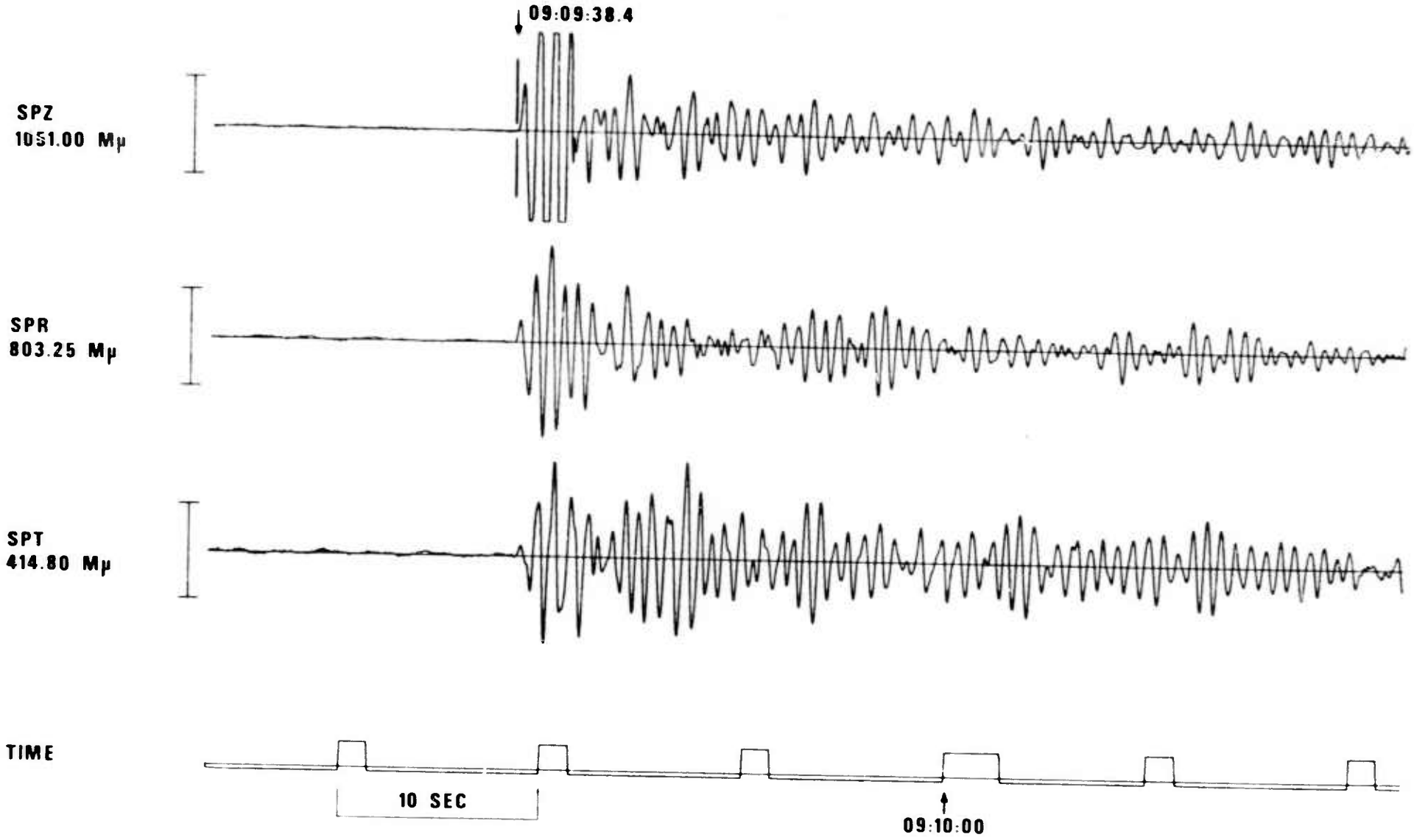
INPUT FOR EVENT 18 OCT 75
08:59:55.0 71.002N 54.000E 0KM.

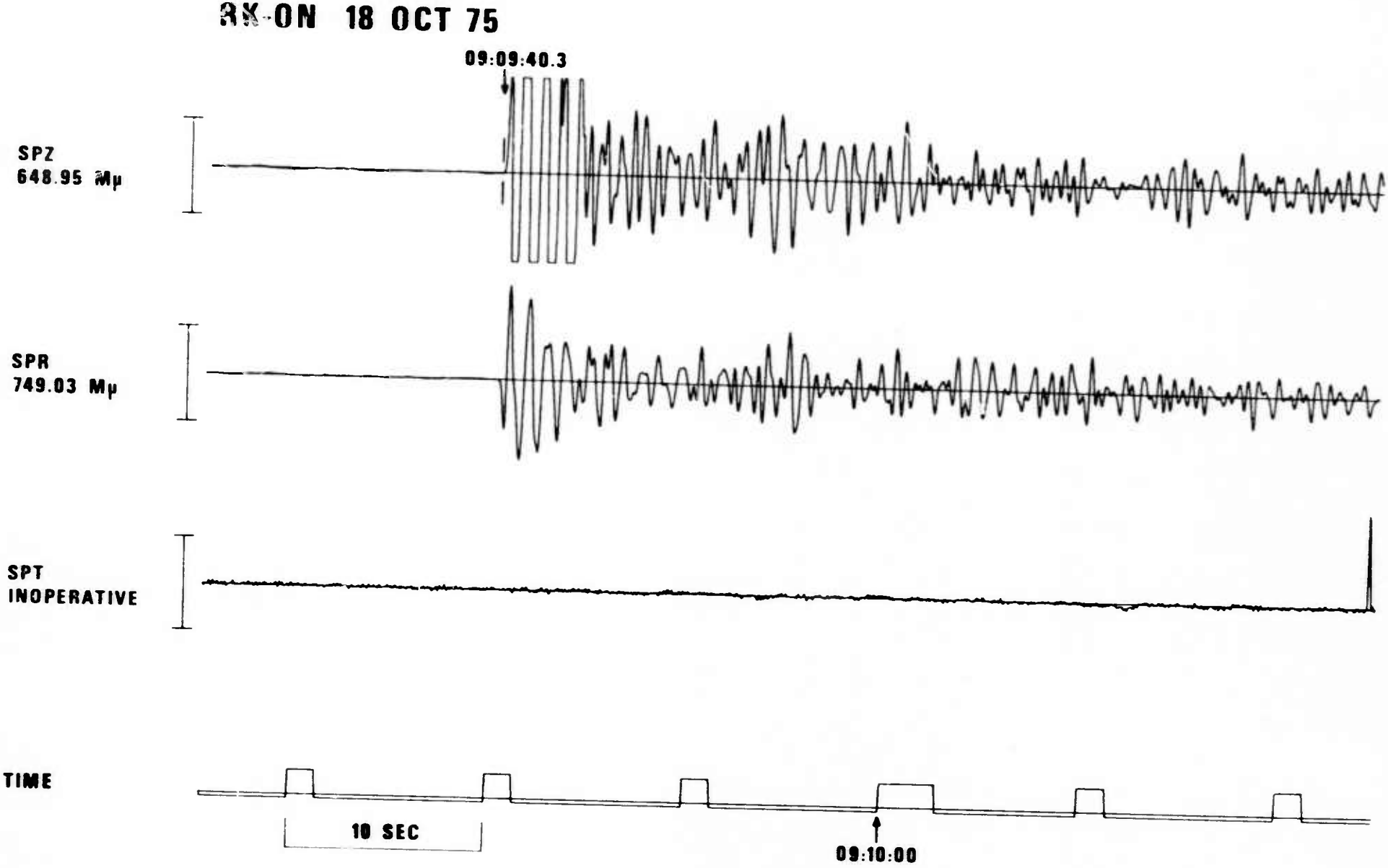
STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIR	DIST
NAC	EP	09 04 24.1	AE	0.6	3781.	6.29			20.1
NAC	LR	09 12 13.0	LPZ	17.0	1014.		5.43		20.1
AIPA	LR	09 26 22.0	LPZ	21.0	26.		4.18		44.5
WH2YK	EP	09 08 42.6	SPZ	1.2	9999.				
WH2YK	LQ	09 26 35.0	LPT	25.0	35.				
WH2YK	LR	09 29 25.0	LPZ	23.0	35.		4.36		49.8
HN-ME	EP	09 09 38.4	SPZ	0.8	9999.				
HN-ME	LR	09 35 10.0	LPZ	18.0	81.		4.79		57.3
RK-CN	EP	09 09 40.3	SPZ	1.0	9999.				
RK-CN	E	09 29 31.0	LPR	20.0	99.				
IAC	EP	09 10 19.3	SAB	0.8	1057.	6.64			63.2
FN-WV	EP	09 10 45.5	SPZ	0.8	9999.				
FN-WV	LQ	09 33 12.0	LPT	30.0	31.				
FN-WV	LR	09 41 48.0	LPZ	18.0	223.		5.30		67.2
CPC	EP	09 11 09.7	SPZ	0.8	1776.	6.85			71.2
CPC	LQ	09 37 18.0	LPT	27.0	67.				
CPC	LR	09 44 52.0	LPZ	17.0	157.		5.17		71.2

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
08:59:42.7	69.993N	54.840E	0. CALC	6.75	0.15	2	4.87	0.5	6
08:59:50.2	69.630N	55.254E	0. FEST	6.59	0.28	3	4.87	0.9	6

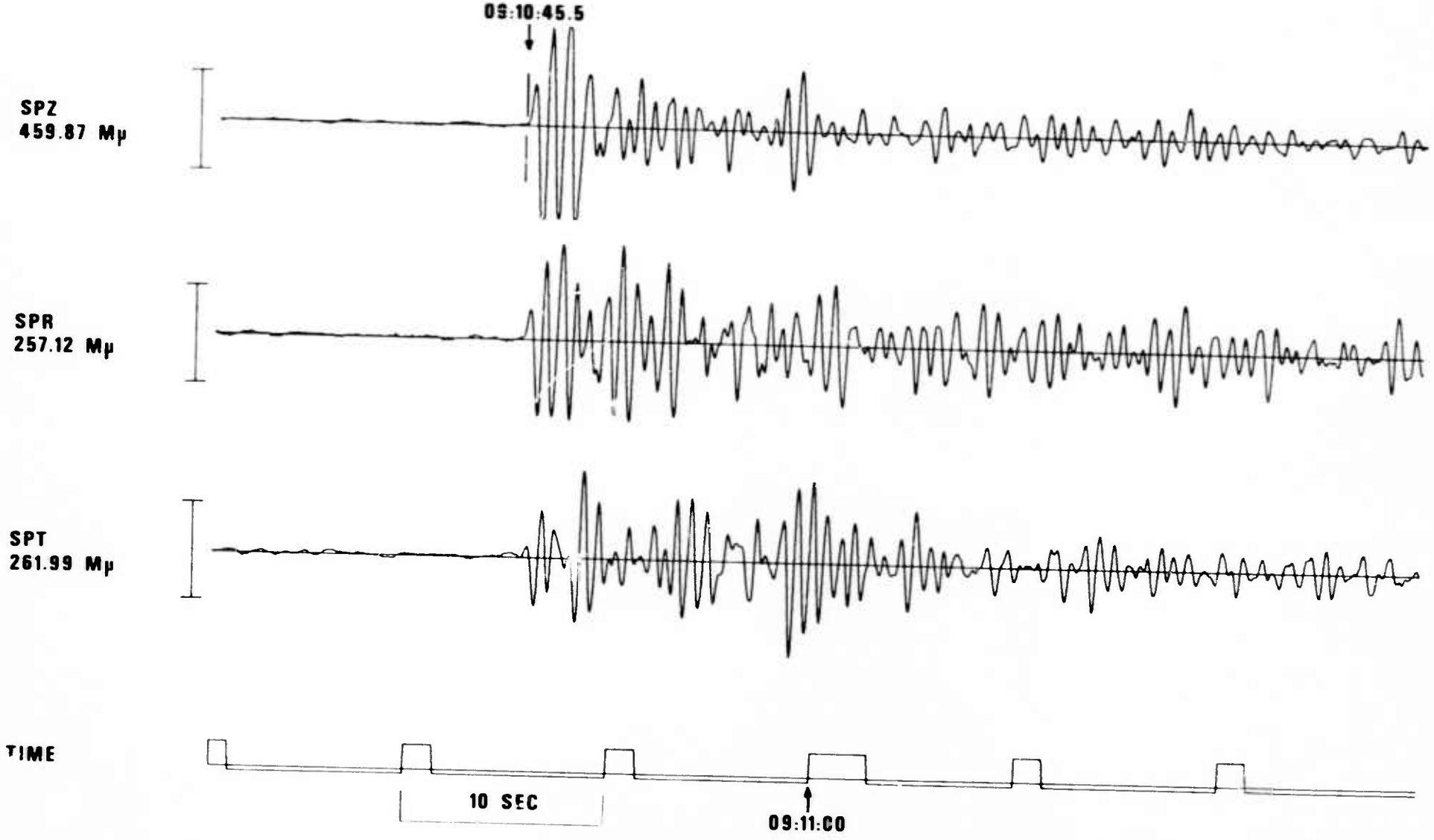
NAO NOT USED IN CALC RUN SP AVG. MAG.

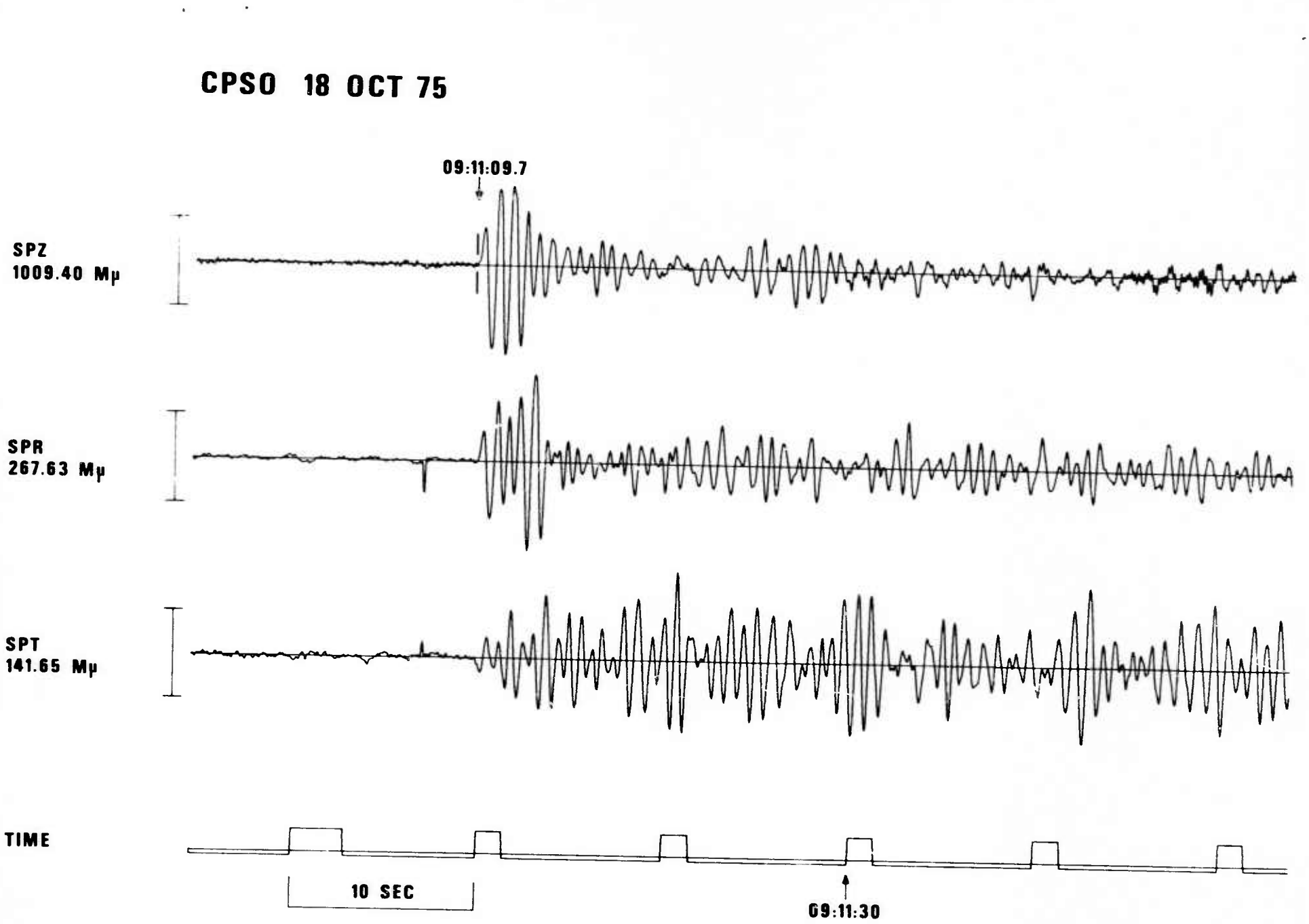

WH2YK 18 OCT 75
09:08:42.6
SPZ
486.80 Mμ
SPR
638.36 Mμ
SPT
464.38 Mμ
TIME
10 SEC
09:09:00

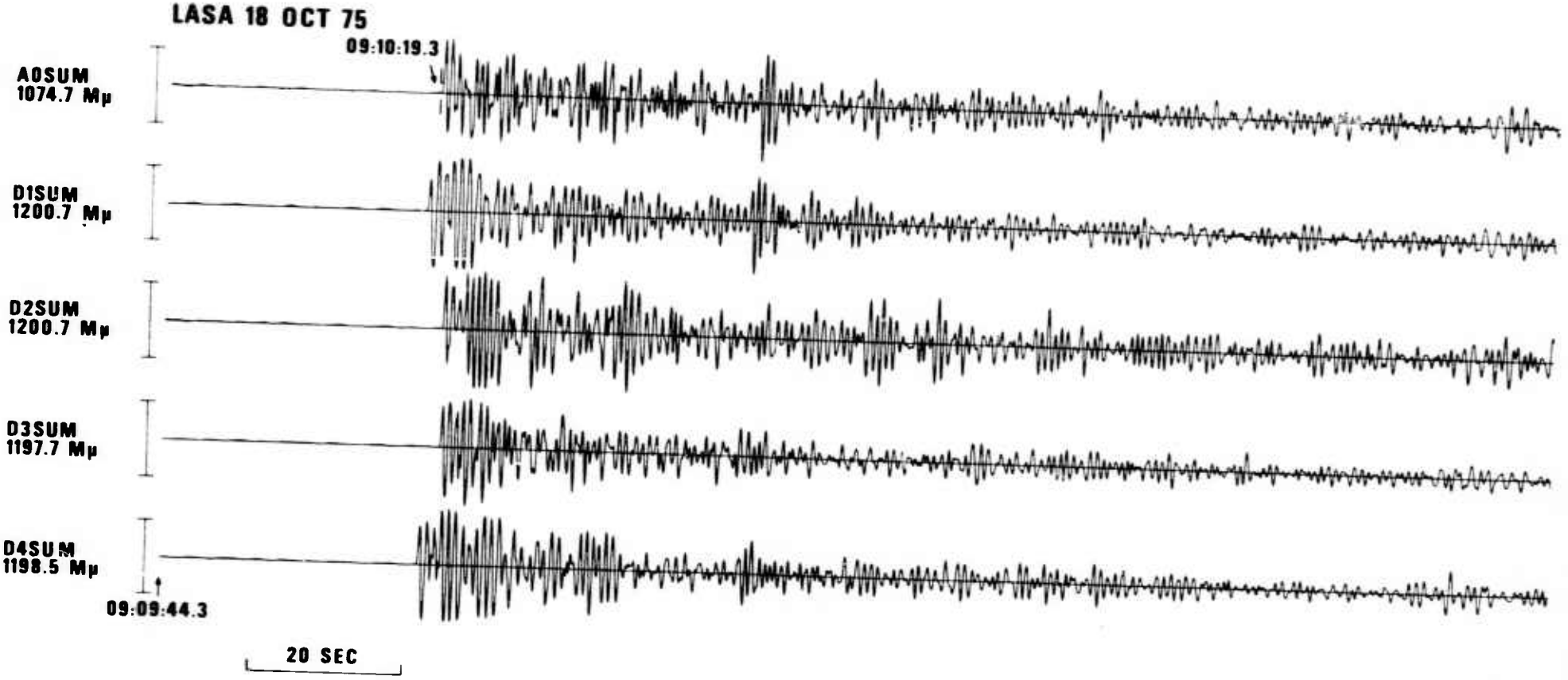

HN-ME 18 OCT 75
09:09:38.4
SPZ
1051.00 Mμ
SPR
803.25 Mμ
SPT
414.80 Mμ
TIME
10 SEC
09:10:00

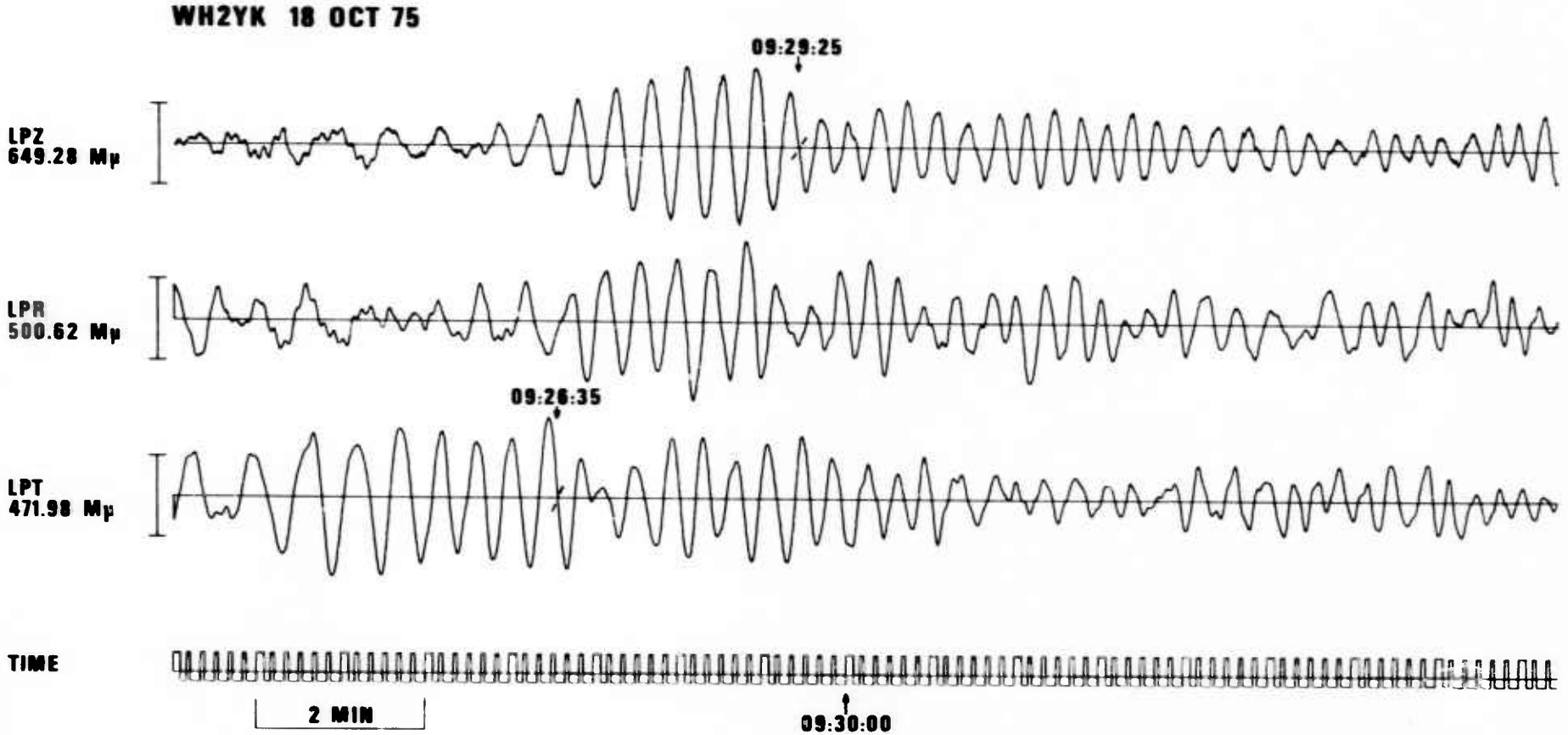

BX-ON 18 OCT 75
09:09:40.3
SPZ
648.95 Mμ
SPR
749.03 Mμ
SPT
INOPERATIVE
TIME
10 SEC
09:10:00

FN-WV 18 OCT 75

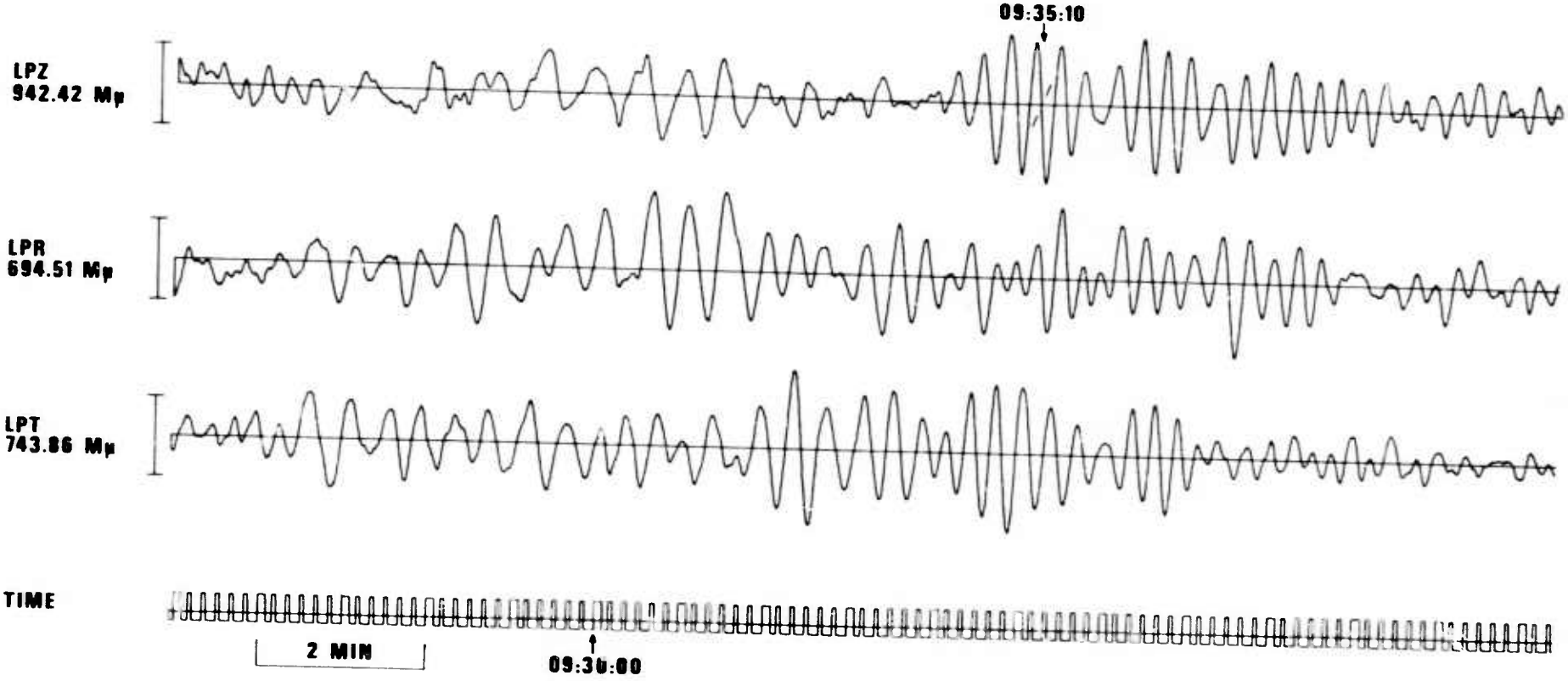


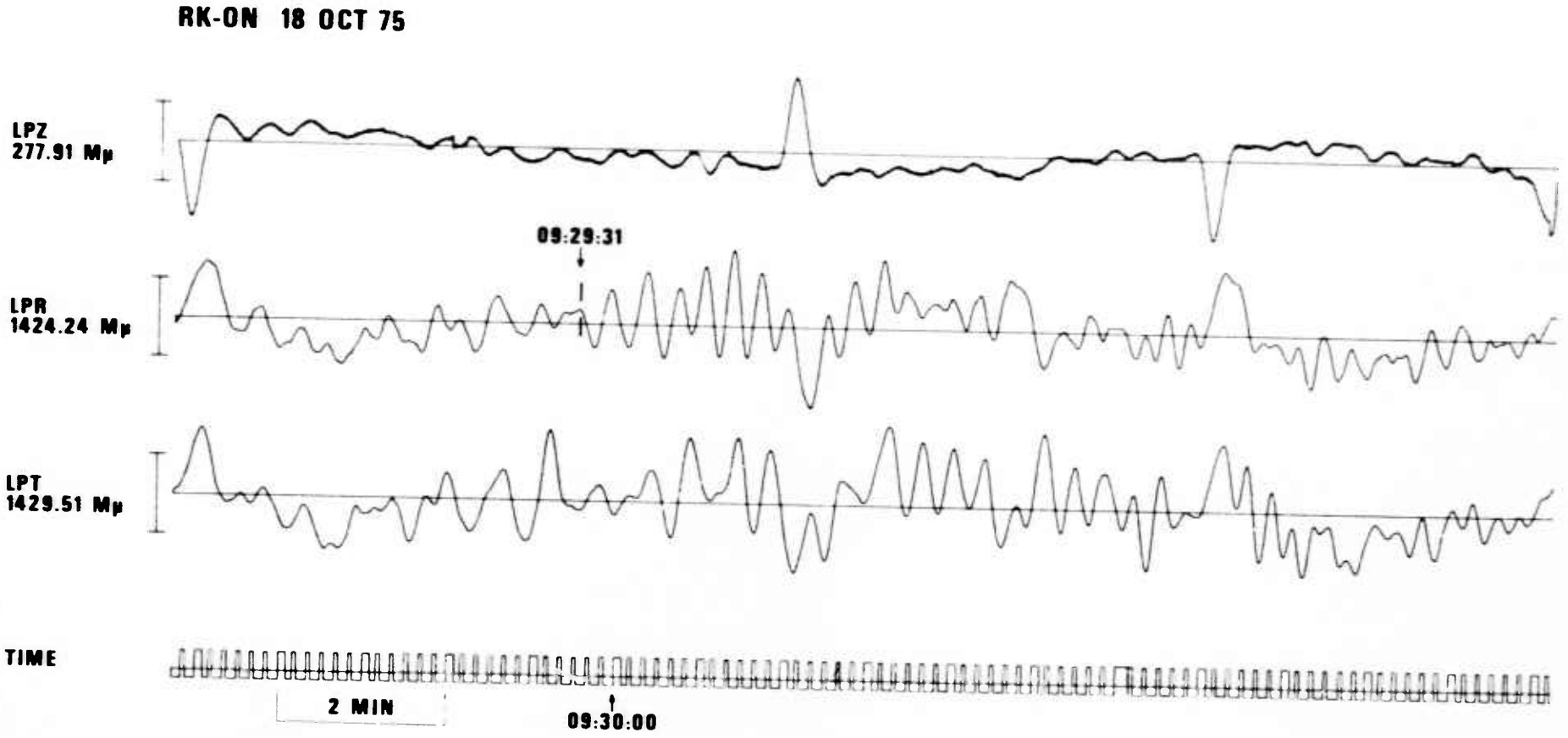

CPSO 18 OCT 75
09:11:09.7
SPZ
1009.40 Mμ
SPR
267.63 Mμ
SPT
141.65 Mμ
TIME
10 SEC
09:11:30

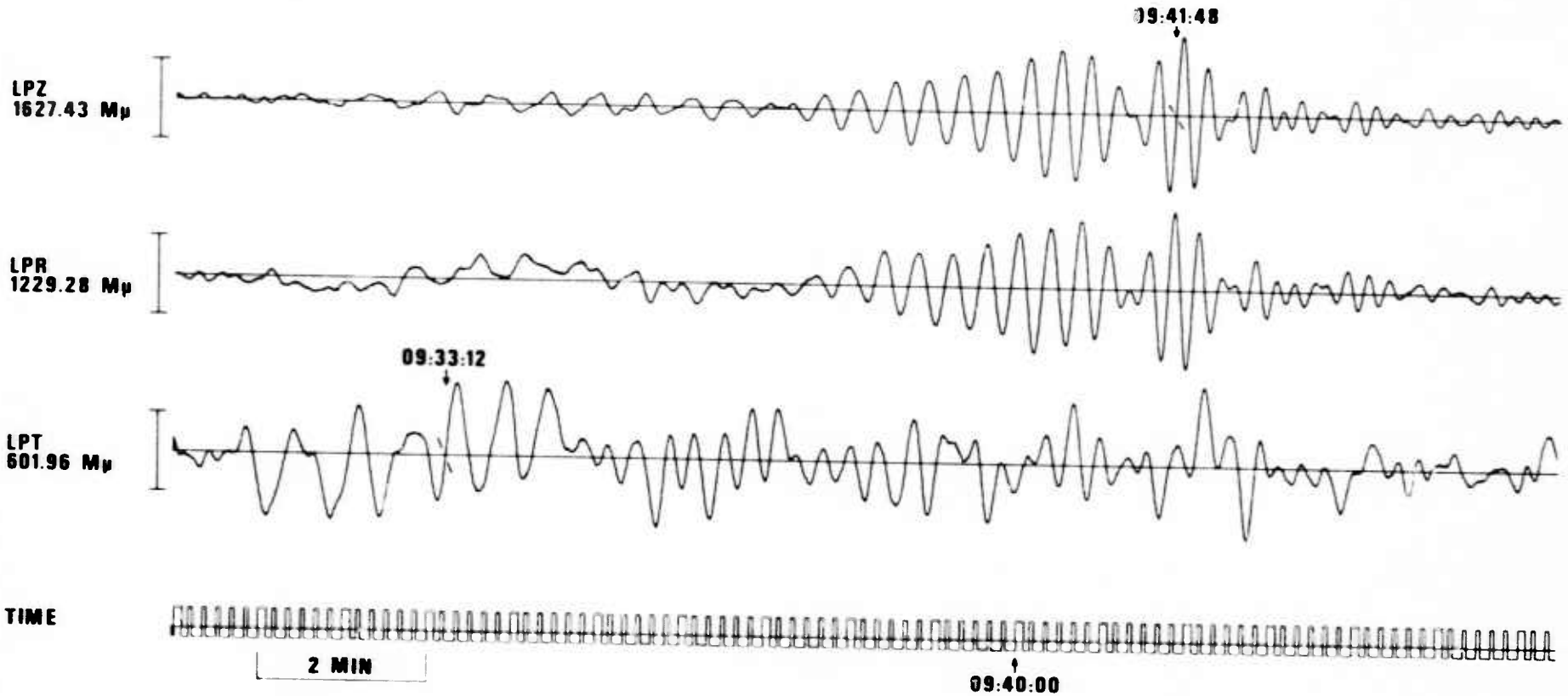

LASA 18 OCT 75
09:10:19.3
A0SUM
1074.7 Mμ
D1SUM
1200.7 Mμ
D2SUM
1200.7 Mμ
D3SUM
1197.7 Mμ
D4SUM
1198.5 Mμ
09:09:44.3
20 SEC

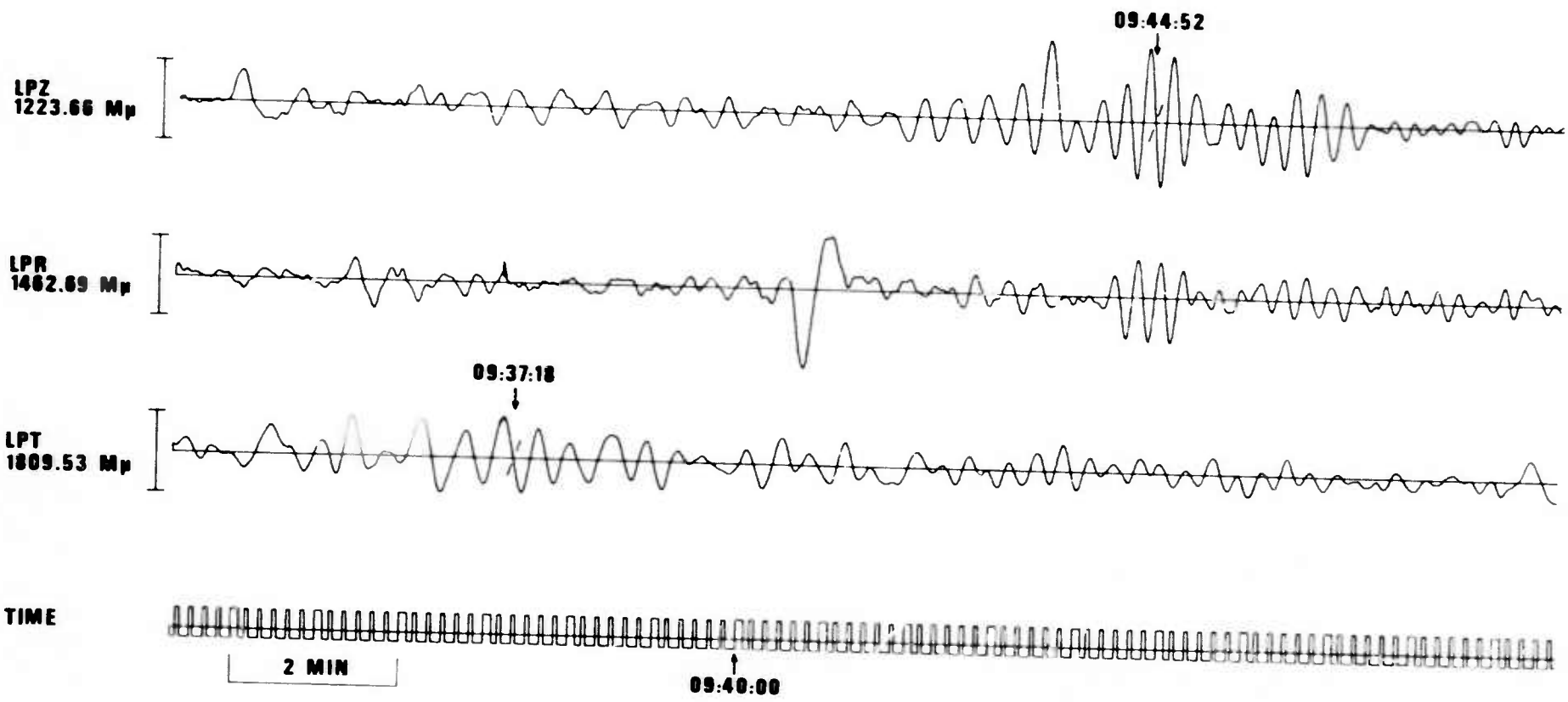

WH2YK 18 OCT 75
09:29:25
LPZ
649.28 Mμ
LPR
500.62 Mμ
09:26:35
LPT
471.98 Mμ
TIME
2 MIN
09:30:00

HN-ME 18 OCT 75

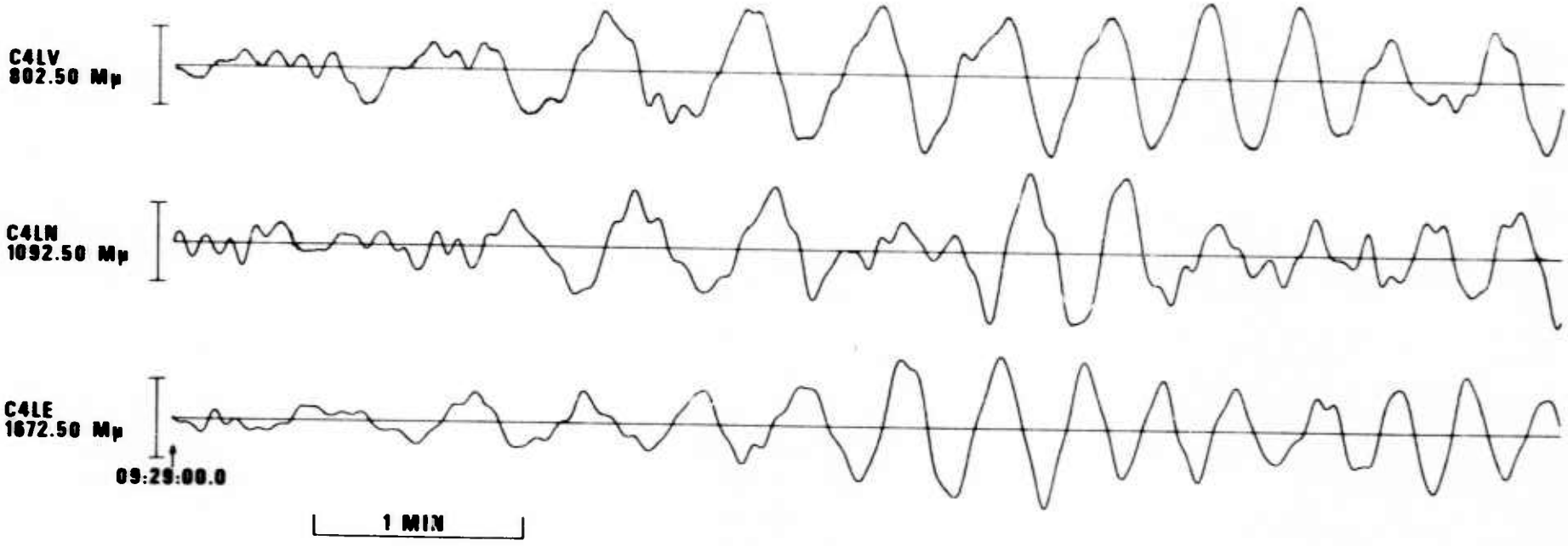



RK-ON 18 OCT 75
LPZ
277.91 Mμ
09:29:31
LPR
1424.24 Mμ
LPT
1429.51 Mμ
TIME
2 MIN
09:30:00

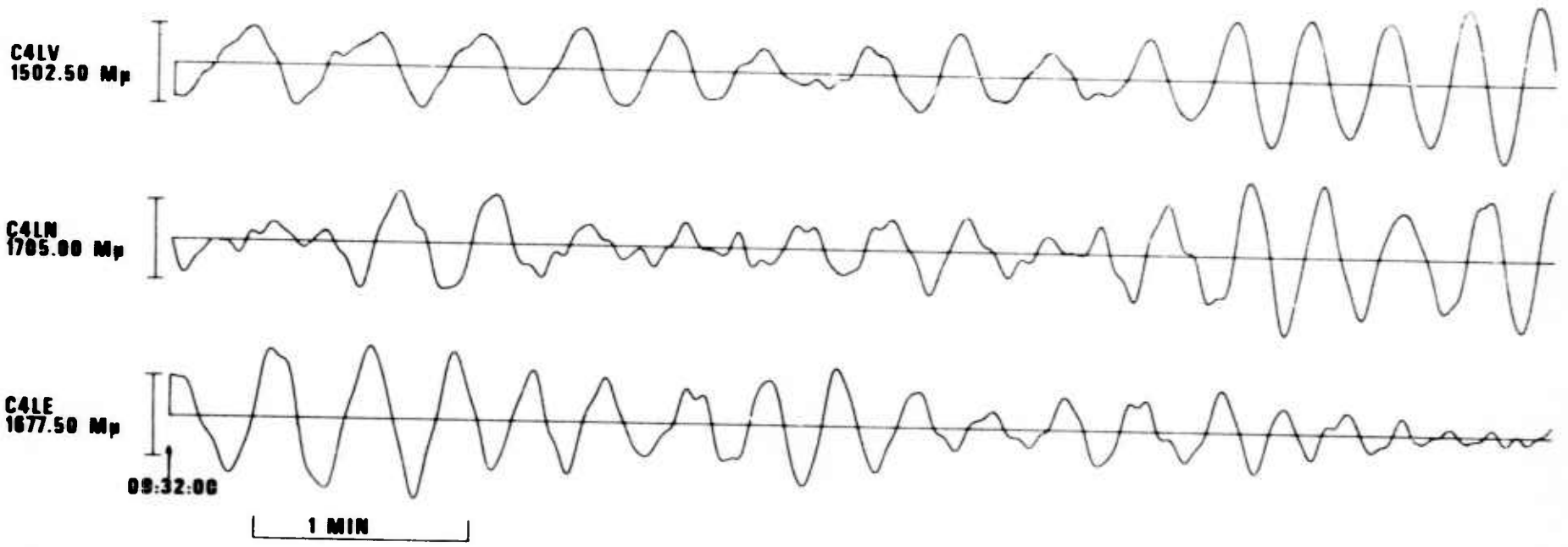

FN-WV 18 OCT 75
09:41:48
LPZ
1627.43 Mμ
LPR
1229.28 Mμ
09:33:12
LPT
601.96 Mμ
TIME
2 MIN
09:40:00


CPSO 18 OCT 75
09:44:52
LPZ
1223.66 Mμ
LPR
1462.69 Mμ
09:37:18
LPT
1809.53 Mμ
TIME
2 MIN
09:40:00

LASA LONG PERIOD C4 SUBARRAY (SEGMENT 1) 18 OCT 75



LASA LONG PERIOD C4 SUBARRAY (SEGMENT 2) 18 OCT 75



ARRAY LONG-PERIOD VERTICAL BEAMS 18 OCT 75